



## ML Part 1 Variation; Revision for the Quiz

Quiz Dates: R0:17<sup>th</sup>, YHig:18<sup>th</sup>, GB:19<sup>th</sup> May

Name \_\_\_\_\_ Class \_\_\_\_\_

### Learning Objectives

**Content** (*This is what we have covered, make sure you can define all the words in bold.*)

- To know that **organisms** exhibit **variation** and that this can be caused by **environmental** and/or **genetic** factors.
- To know that genetic material is made of **DNA** and this is found in a cell's nucleus.
- To know that **genes** are segments of DNA that carry instructions for the **traits** of an organism from parent to offspring.
- Genes occur in pairs called **alleles**. If one of the alleles masks the effect of the other, it is called a **dominant** allele and the other one is called **recessive**.
- To be able to define **phenotype**, **genotype**, **heterozygous** and **homozygous**.
- Variation in a species can lead to **natural selection** and be used for selective breeding (artificial selection.)
- **Mutations** are changes in the DNA sequence. They can be caused by an error in copying the DNA or external factors. Mutations can have positive and negative affects on a species.
- Mutations, natural selection and genetic drift are all considered to be mechanisms of evolution.
- Evidence for evolution from a common ancestor includes the fossil record and embryonic similarity.

**Skills** (*be able to demonstrate these skills in the quiz.*)

- To be able to tally data and organise it into a frequency chart.
- To be able to recognise **continuous** and **discontinuous/ discrete** variation in data and understand when to use a **bar graph** and when a **histogram**.
- To be able to use **Punnett square** diagrams to predict the trait offspring will have.
- To be able to interpret data about natural selection and evolution.

### Quiz Description

The quiz has a vocabulary section, a data plotting question, a question on genetics and a question on evolution. It is out of 25 and there is a regular and advanced version. 5 marks are for the vocabulary section and this is an AO1 grade. The rest is an AO2 grade. 1 point of extra credit is given for choosing the advanced quiz, this will be added to the AO2 grade. The advanced quiz is aimed at students with a grade in science in the A range and those who wish to take biology next year. In this quiz there is no wordbank given for the vocabulary section (although all words asked for are in bold on this sheet.) Also students need to devise their own table to organise their data in the data plotting question plus there is an extension part to the genetics question.